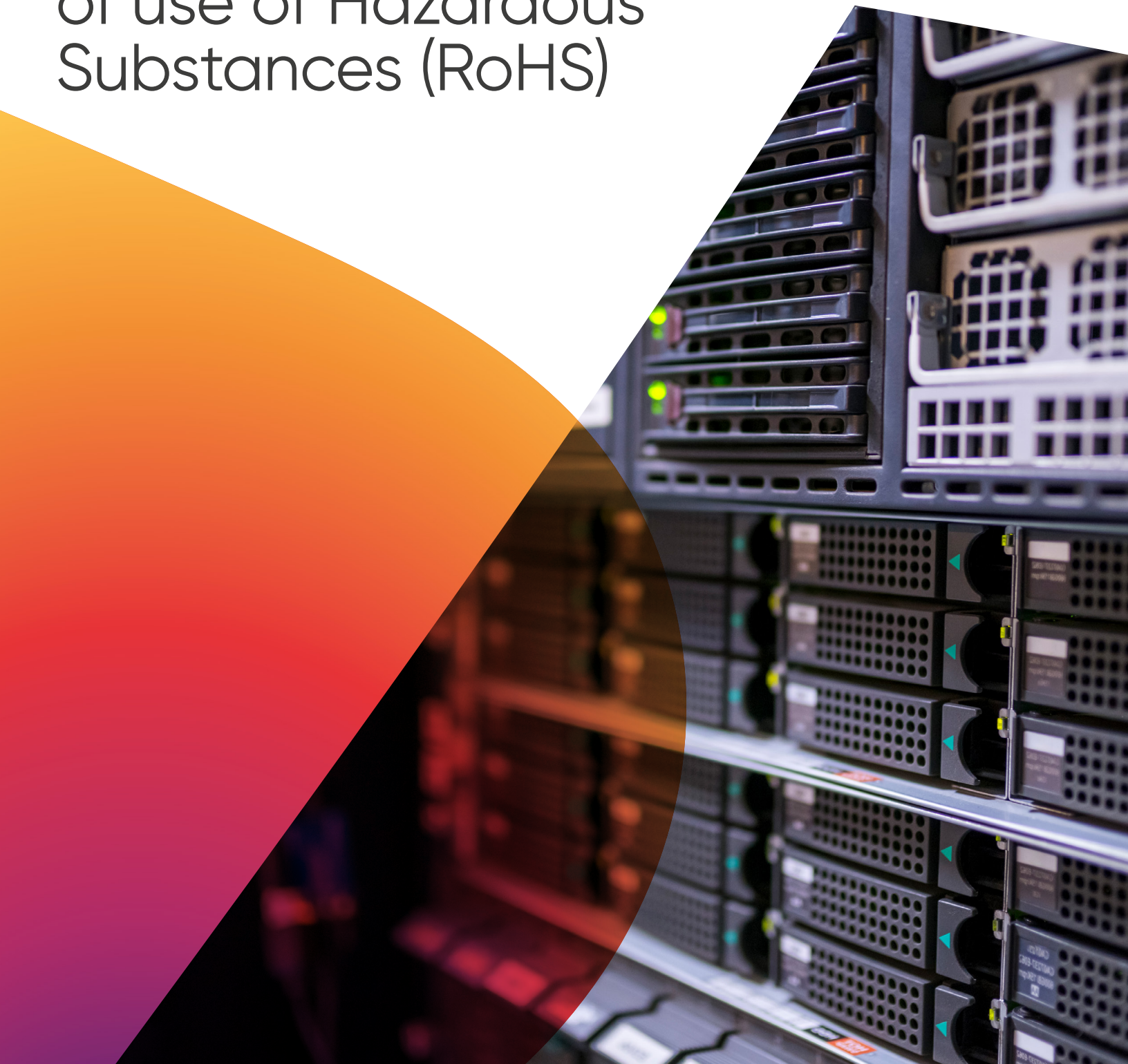


# E-Passivation®

Compliant with Restriction  
of use of Hazardous  
Substances (RoHS)



# E-Passivation® from ArcelorMittal North America

Environmentally responsible temporary protection of galvanized, galvaneal and Galvalume™ steel coils.

This environmentally responsible, hexavalent chromium-free, surface passivation provides temporary protection of galvanized, galvaneal & Galvalume™ steel coils during normal handling, transportation and storage for a wide range of industry applications; for example, domestic appliances, IT electronic components, electrical boxes, and other metallic parts requiring compliance to the European regulations concerning Restriction of Hazardous Substances (RoHS) and End of Life Vehicle (ELV) directive.

## What is E-Passivation®?

ArcelorMittal's E-Passivation® is an environmentally responsible, hexavalent chromium-free passivation or temporary protection surface treatment. This passivation is applied by means of a continuous process on several hot dip metallic coating lines in North America.

E-Passivation® is currently available on hot dip galvanized, galvaneal and Galvalume™ coated steels. The essential role of E-Passivation® is to provide corrosion protection (resistance to metallic coating oxidation) during normal handling, transportation and storage.

## Regulatory Compliance

E-Passivation® complies with the European directives restricting the use of hazardous substances: Restriction of use of Hazardous Substances (RoHS) for the electrical and electronic equipment market and the End of Life Vehicle (ELV) directive.

## Typical Applications

Metallic coated steels with E-Passivation® are used in a very wide range of applications for industrial markets.

- Domestic appliances: white goods
  - (washers, dryers, refrigerators, freezers, stoves, and dishwashers) and brown goods (dehumidifiers, air conditioners, HVAC)
- IT & Electrical Equipment: electrical machinery, IT control panels, electrical boxes
- Lighting equipment including light bulbs & fixtures
- Toy, leisure and sports equipment
- Miscellaneous: personal lockers, automatic dispensers, electrical tools, road signs, etc.

## Product Availability (Steel Grades, Coating Weights and Sizes)

|   | Steel Grades                  | Thickness (mm)               | Width (mm)             | Metallic Coating   |
|---|-------------------------------|------------------------------|------------------------|--|
| Hot Dip Galvanized Steel + E-Passivation® | Commercial, Structural & HSLA | 0.33 (0.013") – 4.3 (0.168") | 600 (24") – 1829 (72") | Z90 (G30), Z120 (G40), Z180 (G60), Z275 (G90), Z350 (G115), Z450 (G150), Z610 (G200) and Z720 (G235) |
| Galvaneal Steel + E-Passivation®          |                               |                              |                        | ZF75 (GA25) up to ZF120 (GA40)   |
| Galvalume™ Steel + E-Passivation®         |                               |                              |                        | AZM100 (AZ30), AZM150 (AZ50), AZM165 (AZ55), AZM180 (AZ60), and AZM210 (AZ70)                        |



### Future E-Passivation® Products

Development work is on-going for the following other products:

- E-Passivation® Galvalume Plus™ and LustreLok™

E-Passivation® was designed to meet our customers' needs for a legislation compliant passivation option. Typical corrosion performance of hot dip galvanized and galvalume coated steels are listed in the following table. A similar level of care is recommended in handling and inventory practices to ensure that coils are not exposed to moisture or a humid environment.

E-passivated coils should not be interchanged with standard passivated coils for exterior exposed end uses, as they may show visual differences (unrelated to performance) during installation and after weathering. For example, do not mix cladding from standard and RoHS compliant passivation on a single building/job site.

### Overview of the performance of E-Passivation® on hot dip galvanized, Galvalume™ and galvalume coated steels

|   |                                |           |
|---|--------------------------------|-----------|
| Protection during normal handling, transport and storage applies to galvanized, Galvalume™            | Condensing Humidity Cabinet(1) | 500 hours |
| Protection during normal handling, transport and storage applies to galvanized, Galvalume™, galvalume | Wet Stack Test(2)(3)           | 6 weeks   |

(1) Resistance to rust in condensing humidity cabinet test according to ASTM D4585 (Evaluation: product should not have more than 5% rust on the surface of the metallic coating after 240 hours)

(2) Resistance to rust in wet stack test per ArcelorMittal in-house test (Evaluation: samples taken from within the stack should not have more than 5% rust on the surface of the metallic coating after 3 weeks)

(3) Protection during normal handling, transport and storage

*Not all grade/thickness/width combinations are possible. Please inquire for availability.*



## Smarter steels for people and planet

ArcelorMittal is one of the world's largest steel and mining companies. Guided by a philosophy to produce safe, sustainable steel, it is a leading supplier of quality steel products in all major markets including automotive, construction, energy, household appliances and packaging. ArcelorMittal is present in more than 60 countries and has an industrial footprint in more than 20 countries.

With a strong presence in North America, Europe, South America and South Africa, and an emerging presence in China, ArcelorMittal delivers a large scale of products, solutions and services to customers with the same quality focus in all regions. ArcelorMittal is a leader in steel technology, both in the breadth and depth of our product portfolio, and in our ability to supply a range of grades throughout the world. ArcelorMittal is a supplier of choice for all markets, a testament of our commitment to working collaboratively with our customers to engineer advanced steel grades to meet their needs.

Galvalume and Galvalume Plus are trademarks of ArcelorMittal in Canada and are trademark of BIEC International Inc. in the United States.

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E-Passivation can be ordered directly from ArcelorMittal USA or ArcelorMittal Dofasco in Canada by contacting our Sales Department through the details below.

**Special Customer Note:** The information in this brochure is provided for the general guidance of customer and does not imply any warranty. Information provided is based on research conducted by ArcelorMittal and other organizations. Interpretation and/or use of this information is the sole responsibility of the user.



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